NONLINEAR DEGENERATE DIFFUSION PROBLEMS WITH A SINGULARITY

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Abstract. We consider a class of degenerate nonlinear diffusion problems with a singularity in a finite value \( M > 0 \) of the unknown \( v \). For such problems, we introduce a notion of renormalized entropy solution which (under a particular “growth” assumptions on the diffusion term) can reach the value \( M \). We prove the existence of such a solution for the stationary equation with \( L^1 \) data.


Keywords and phrases: degenerate, homogenous boundary conditions, renormalized entropy solution, continuous flux, integrable data.

REFERENCES


